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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,466	06/12/2001	Jerry A. Pickering	10013	4348

7590

07/31/2003

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EXAMINER

HU, HENRY S

ART UNIT

PAPER NUMBER

1713

DATE MAILED: 07/31/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/879,466

Applicant(s)

PICKERING ET AL.

Examin r

Henry S. Hu

Art Unit

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-- Th MAILING DATE of this communication appears on th cover she t with the correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 1-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 16-29 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-29 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 May 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. It is noted that USPTO has received amendment as paper No. 8 filed on May 1, 2003 under CFR 1.121(C) as well as an amended drawing as paper No. 9 filed on May 1, 2003. In response to 112-second paragraph rejection, Claims 24, 25 and 26 were amended by the Applicants to use phrase “**essentially absent from**” instead of the phrase “**at least essentially absent from**”. As suggested by the examiner, the paragraphs including page 14 at paragraph 063, page 38 at paragraph 0161, and page 52 at paragraph 0217 were replaced with new paragraphs. The specification objections (a)-(b) as well as the 112-second paragraph rejections on Claims 24-26 are therefore removed. After further consideration, **all 103(a) rejections in the first Office Action filed on January 2, 2003 as Paper No. 6 are now removed.**

Claims 1-29 are pending. This application contains claims 1-15 drawn to an invention nonelected with traverse in Papers No. 5 and 6. As mentioned in the first Office Action filed on January 2, 2003 as Paper No. 6, a complete reply to the final rejection must include **cancellation of nonelected claims** or other appropriate action (37 CFR 1.144) See MPEP § 821.01. An action follows.

Drawings

2. INFORMATION ON HOW TO EFFECT DRAWING CHANGES

2-1. Correction of Informalities -- 37 CFR 1.85

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New corrected drawings must be filed with the changes incorporated therein. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

2-2. Corrections other than Informalities Noted by Draftsperson on form PTO-948.

All changes to the drawings, other than informalities noted by the Draftsperson, **MUST** be made in the same manner as above except that, normally, a highlighted (preferably red ink) sketch of the changes to be incorporated into the new drawings **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.185(a). Failure to take corrective action within the set (or extended) period will result in **ABANDONMENT** of the application.

Although the Applicants have submitted a corrected drawing as paper no. 9 filed on May 1, 2003, a notice of draftsperson's patent drawing objection review (Form 948) is attached again; please make corrections on item 10 regarding character of lines, numbers and letters not uniformly thick and well defined, poor line quality, and on item 12 regarding numbers and reference characters not plain and legible.

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3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

4. *The limitation of parent Claim 16 of the present invention relates to a composition comprising (A) at least one fluoroelastomer, and (B) amorphous silica surface treated with at least one organoaminosilane. The other parent Claim 24 relates to a process of preparing a surface contacting member coating composition of Claim 16. See other limitations of Claims 17-23 and 25-29.*

5. Claims 16-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Cole et al. (US 6,579,929).

Regarding the limitation of amended parent **Claim 16**, Cole et al. disclose the preparation of a composition obtained from dispersing surface-stabilized, non-agglomerated silica within a polymer (column 2, line 52-59). The polymeric rubber used can be a fluoroelastomer and

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tetrafluoroethylene/propylene copolymeric rubber (column 13, line 11-20). Cole et al. further disclose a hydrophobating agent such as hexamethyl disilazane with a catalyst such as aminopropyl-trimethoxysilane can be used together to modify the silica surface (column 7, line 56 – column 8, line 32), the surface of non-agglomerated silica was stabilized thereby substantially preventing subsequent agglomeration of the silica (column 4, line 18-20).

6. Regarding **Claim 17**, Cole et al. disclose some curing additives such as zinc oxide, coupling agent, sulfur- and peroxide-based curing systems can be included (column 11, line 19-42).

Regarding **Claim 19**, Cole et al. disclose some solvents such as water and alcohol are used (column 4, line 46 – column 5, line 58; column 7, line 37-55).

Regarding **Claims 18 and 20**, both hydrophobating agent such as **hexamethyl disilazane** and the catalyst such as **aminopropyl-trimethoxysilane** as discussed on Claim 1 are **organoaminosilane compounds**.

7. Claims 16-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Winnik et al. (US 5,102,763).

Regarding the limitation of amended parent **Claim 16**, Winnik et al. disclose the preparation of toner compositions containing (A) **colored silica particles having dyes**

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c. valently bonded to the particle surfaces through silane coupling agents (abstract, line 1-4), and (B) **a fluoropolymer** as the carrier particles as disclosed in US Patent Nos. 3,526,533, 3,849,186, and 3,942,979 (column 18, line 23-27; column 25, line 40-45; column 26, line 28-33; column 27, line 54-57). Winnik et al. further disclose various silane coupling agents include **aminialkyl silanes, aminoalkylaryl silanes, and N, N-(2'-hydroxyethyl)-3-aminopropyl-triethoxysilane** (column 6, line 31-51). The surface of non-agglomerated silica was thereby stabilized with subsequent minimal or no agglomeration of the silica (column 4, line 30-35).

8. Regarding **Claim 17**, Winnik et al. disclose some external additives such as zinc stearate, chromium oxide can be included (column 11, line 19-42).

Regarding **Claim 19**, Winnik et al. disclose some solvents such as toluene and chloroform or a suitable solvent mixture are used to dissolve the carrier polymer (column 17, line 34-38).

Regarding **Claims 18 and 20**, the silane coupling agents including **aminialkyl silanes, aminoalkylaryl silanes, and N, N-(2'-hydroxyethyl)-3-aminopropyl-triethoxysilane** (column 6, line 31-51) as discussed on Claim 1 **are all relating to organoaminosilane compounds.**

Claim Rejections - 35 USC § 103

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9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 21-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole et al. (US 6,579,929) or Winnik et al. (US 5,102,763), each individually in view of Grootaert et al. (US 4,912,171) or Chen et al. (US 5, 824,416).

Regarding **Claims 21-28**, the discussion of the disclosures of the prior art of Cole et al. and Winnik et al. for Claims 16-20 of this office action is incorporated here by reference. With respect to Claims 21-28, the reference is silent about including the claimed crosslinking agents to make a curable composition. Grootaert et al. teach that **a terpolymer of vinylidene fluoride, tetrafluoroethylene and a hydrocarbon olefin can be incorporated in a mixture including a polyhydroxy compound, an organo-onium compound and a metal oxide or hydroxide an**

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acid acceptor such as MgO and Ca(OH)₂ (column 2, line 25 – column 8, line 60; abstract, line 1-11). In the other way, Chen et al. teach **in order to form the fluoroelastomer layer, a cure system including a polyhydroxy compound, an organophosphonium compound and a metal oxide or hydroxide such as MgO and Ca(OH)₂** can be included in the composition (column 5, line 65 – column 6, line 24). The advantage in Grootaert or Chen is that such a composition becomes **curable due to a crosslinking mechanism**.

In light of the teaching from Grootaert or Chen each individually, it would be obvious for one having ordinary skill in the art to include a crosslinkable mixture of **a polyhydroxy compound, an organo-onium compound and a metal oxide or hydroxide such as MgO and Ca(OH)₂** as taught by Grootaert or Chen in Cole's or Winnik's fluoroelastomeric **composition**, with advantage as such an addition will make the composition becomes curable, thereby properties with better performance can be obtained.

11. Claims 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cole et al. (US 6,579,929) or Winnik et al. (US 5,102,763), each individually in view of Grootaert et al. (US 4,912,171) or Chen et al. (US 5, 824,416) as applied to Claims 21-28, and further in view of Heeks et al. (US 6,485,835) or Kaplan et al. (US 6,261,688).

Regarding **Claims 29**, the discussion of the disclosures of the prior art of Cole et al. and Winnik et al. for **Claims 16-28** of this office action is incorporated here by reference. The reference is silent about including the claimed difunctional polydiorganosilane with advantage to

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make a curable composition. Hecks et al. or Kaplan et al. each teach that amino-functional compound as **disclosed in column 18, line 46-50 for Kaplan and in column 19, line 23-24 for Hecks reading on the claimed difunctional polydiorganosiloxane compounds**, can be used in the fluoroelastomeric composition. Since it is difficult to limit all the chains to be the same P, therefore some may have 1-5 or more amino-functional groups. **The advantage is for use as a release agent.**

In light of the teaching from Hecks or Kaplan each individually, it would be obvious for one having ordinary skill in the art **to include a difunctional polydiorganosilane as taught by Hecks or Kaplan in Cole's or Winnik's fluoroelastomeric composition**, with advantage as such an addition will make the product from such a composition becoming crosslinkable and curable since the agent is difunctional, as well as its coating film becoming easy to be released due to the existence of polysiloxane groups, thereby better performance properties can be obtained.

Conclusion

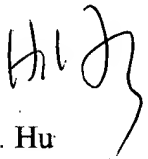
12. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure. The following references relate to a composition comprising at least one **fluoroelastomer, and amorphous silica surface treated with at least one organoaminosilane:**

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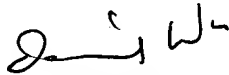
US Patent No. **6,159,588 to Eddy et al.** disclose a fuser member comprises a substrate, and a thermally conductive fusing layer comprising **a fluoropolymer, a crosslinked silicone article and a micro-sized alumina** (column 2, line 52-57). However, Eddy et al. fail to teach using a surface-organo-modified silica, particularly modified with organoaminosilane.

13. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Henry S. Hu whose telephone number is (703) 305-4918. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (703) 308-2450. The fax number for the organization where this application or proceeding is assigned is (703) 746-9051. Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (703) 308-0661.


Henry S. Hu

July 22, 2003


DAVID W. WU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700